# West Virginia
# Forest Health Highlights

January 2000

## The Resource

West Virginia has more than 11.8 million acres of forested land. The highly diverse terrain with elevations up to nearly 5,000 feet above sea level has produced a rich diversity of forest species — oaks, hickories, spruce, pines, and sugar maple, the state tree. Ninety percent of all forests in the State are privately owned, but there are nine state forests, 36 state parks, and 56 wildlife management areas that provide public enjoyment.

## Forest Stewardship

The philosophy of the Forest Stewardship Program is to ensure that private landowners apply environmental and economic resource management principles to benefit themselves, future landowners, and the public. This is done by developing a long-term management plan for each woodland owner who is willing to participate. The program includes a forest management plan, written by a professional forester, as well as financial assistance for reforestation, forest improvement, soil and water protection, wetlands protection, and enhancement of fisheries habitat, wildlife habitat, and forest recreation. In West Virginia, 3,090 stewardship plans for 532,487 acres have been developed for landowners as of November 30, 1999.

## Forest Pest Issues

**Gypsy Moth** — The gypsy moth fungus, *Entomophaga maimaiga,* first found in West Virginia in 1992, has spread throughout infested areas of the State and now occurs in 23 counties. Since 1995, this fungus has dramatically reduced gypsy moth populations. However, gypsy moth populations increased in 1999 when dry conditions in May prevented infection by *E. maimaiga.* Despite the increase, aerial surveys detected no defoliation in 19 counties of the generally infested region. Several other areas with heavy larval populations were ground checked, but only light defoliation was observed. No acres qualified for gypsy moth suppression treatment under the Cooperative State, County, Landowner (CSCL) Program in 1999. However, under the Slow the Spread (STS) Program, a total of 1,110 acres were treated with *Btk* and 60 acres with Dimilin®. The STS mating disruption application treated 3,045 acres of private lands in Greenbrier and Mercer Counties.

**Periodical Cicadas —** Three periodical cicada species, *Magicicada septendecim* (L.), *M. cassini* (Fisher), and *M. septendecula* (Alexander and Moore), made a noisy and highly publicized appearance as predicted during the spring of 1999 over large portions of Ohio and West Virginia. The emergence of Brood V is the largest occurring in either State and also encompassed the southwest corner of Pennsylvania, the westernmost county of Maryland, and the northwest corner of Virginia. Brood V was last seen in 1982. Branch mortality from female cicada egg-laying mostly damaged small shade and ornamental hardwood trees.

**Hemlock Woolly Adelgid (HWA) —** The WVDA released *Pseudoscymnus tsugae* Sasaji and McClure in Hampshire County near Hanging Rock to study its effect against HWA in cooperation with a USDA Forest Service multi-state predator impact study. The predaceous beetle is the size of a poppy seed and feeds on all adelgid life stages. It is one of the most widespread and effective predators of HWA in Japan. *Pseudoscymnus tsugae*'s potential as a biological control agent against HWA in the United States is extremely promising based on studies conducted by Mark McClure in Connecticut. Laboratory experiments also indicate the beetle will feed on other harmful adelgids, such as balsam woolly adelgid, Cooley spruce gall adelgid, and pine bark adelgid.

**Dogwood Anthracnose** — A survey during the summer of 1999 was conducted in all 55 counties of the State to determine the impact of dogwood anthracnose disease on the native flowering dogwood trees in the forested setting. Dogwood anthracnose disease is caused by the fungus, *Discula destructiva*. Survey protocols of the USDA Forest Service State and Private Forestry in the Southeast were followed. Each of the 100 survey plots contained 10 trees with a total of 1,000 trees being examined. This survey is a repeat of surveys first conducted in 1989/90 and in 1994/95.

Between the first survey and last year's survey, mortality increased from 8.8 percent to 44.1 percent. Dogwood mortality is much higher at elevations of 2,000 feet or greater above sea level (68.2 percent) than at elevations of 1,000 -1,999 feet above sea level (39 percent) or at elevations less than 1,000 feet above sea level (29.1 percent). This agrees with the results from similar surveys in the Southeast where dogwood anthracnose epidemics were more severe at higher elevations.

**Rhabdocline Needlecast of Douglas-fir** — The fungus, *Rhabdocline pseudotsugae*, causes one of the most serious needlecast diseases of Douglas-fir foliage. This disease had never been detected in West Virginia until 1999 when it was detected at one location each in Hardy, Mineral, and Jefferson Counties.

**Thyronectria Canker of Honey Locust** — Thyronectria canker, caused by the fungus *Thyronectria austro-americana*, was detected for the first time in West Virginia on an ornamental planting of honey locust in Berkeley County. Investigations found numerous perennial cankers on the main stem of diseased trees. The fungus was apparently introduced on diseased nursery stock. In August of 1999, diseased trees were also detected at Harper's Ferry National Park in Jefferson County.

**Drought** — The summer of 1999 was a record drought season in West Virginia. Both Governor Cecil Underwood, on June 28, and U.S. Secretary of Agriculture Dan Glickman, in late July, declared the State a drought disaster area . According to the Climate Prediction Center of National Oceanic and Atmospheric Administration, West Virginia fell into two drought categories on the Palmer Drought Index: severe drought (-3 to -3.99 inches) and extreme drought (greater than -4 inches). The majority of the severe drought occurred in the western part of the State whereas the extreme drought occurred in the eastern part of the State. Some counties had departures from the normal of -10 to -10.99 inches.

**Elm Yellows —** This serious disease of elm trees, caused by the elm yellows phytoplasma, was first reported in 1939 in western West Virginia. In 1994, it was first reported on American and slippery elms in the Eastern Panhandle of West Virginia in Jefferson and Berkeley Counties. By 1998, elm yellows disease was widespread in these counties. Also that year, the disease was detected for the first time in Morgan and Hampshire Counties. Surveys in 1999 revealed only a slight change in its distribution in the Eastern Panhandle. In Morgan County, numerous diseased trees were detected along the Potomac River from Cherry Run on the northeast border to Sir John's Run north of Berkeley Springs. Elm yellows disease is now common north of Route 9 between Hedgesville and Berkeley Springs and Back Creek Valley.

## Forest Fire Protection

The drought, which encompassed West Virginia, created a more severe forest fire season during 1999 than in 1998. There were 1,875 forest fires, nearly double from the previous year. Fires burned 84,434 acres, four times that of the previous year. Damage estimates totaled $25,330,200 compared with $6,147,660 the previous year. Suppression cost estimates of $196,723 were more than doubled the estimated $99,884 in 1998. The number one cause of wildfires in West Virginia continues to be arson with debris burning a distant second.

## Forest Health Monitoring

Since 1995, the West Virginia Division of Forestry has maintained a permanent network of 96 plots to monitor forest health conditions across the State. The network is part of the National Forest Health Monitoring Program conducted by the U.S. Forest Service. In 1999, full-time service foresters from the Division of Forestry received training in Wisconsin then visited 31 forest health monitoring plots to monitor crown conditions, tree damage, lichen populations, vegetation diversity and took soil samples. The foresters also received ozone damage recognition and rating training conducted by the West Virginia Department of Agriculture forest pathologist and forest entomologist at a one-day training session in central West Virginia.
***http://willow.ncfes.umn.edu/fhm/northeast/ne99.htm***

## Periodic Forest Inventory

In cooperation with the West Virginia Division of Forestry, the USDA Forest Service initiated its periodic inventory of West Virginia's forest resources in March 1999. During the 1999 field season, 482 of the 2,500 planned inventory plots were measured. Data collected is used to determine growth, mortality, species diversity, and quantities of timber available. This information evaluates the condition of the forest resource with respect to harvesting, urbanization, productivity, and influence of disturbances such as storms, fire, and insects or diseases. The current condition of the forest resource will be compared with the last inventory of 1987-88 to assess changes in the forest resources.
***http://www.fs.fed.us/ne/fia***

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